

Fig. 3.

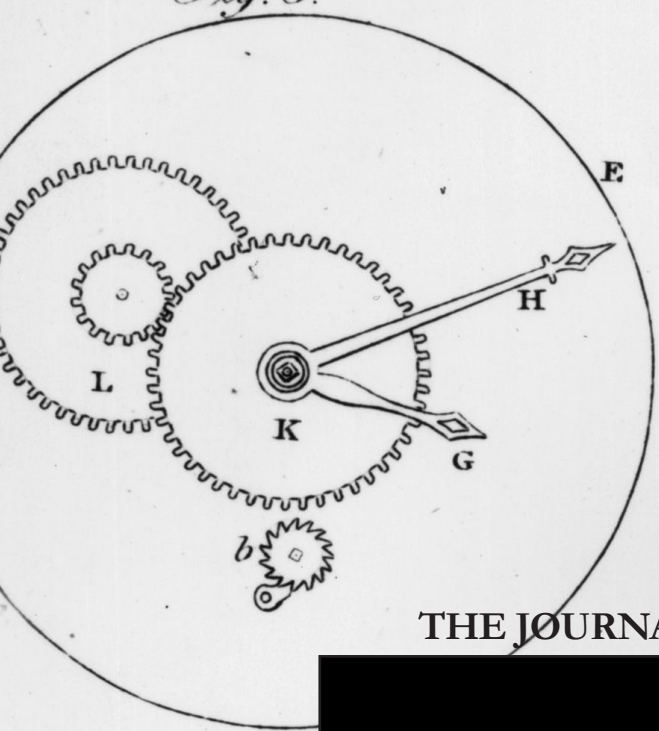
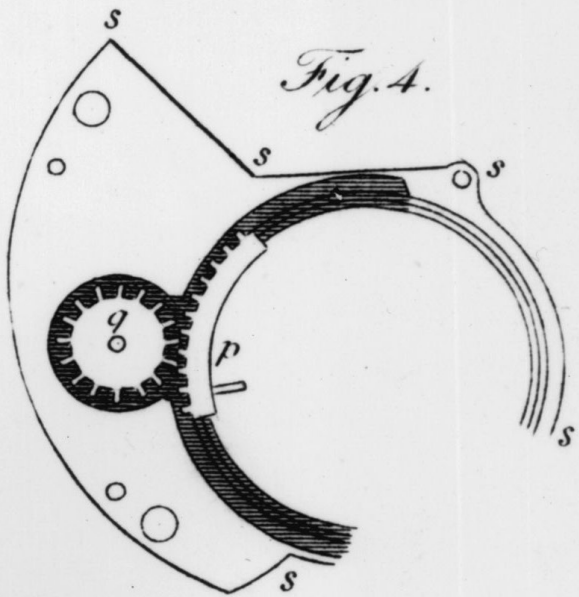


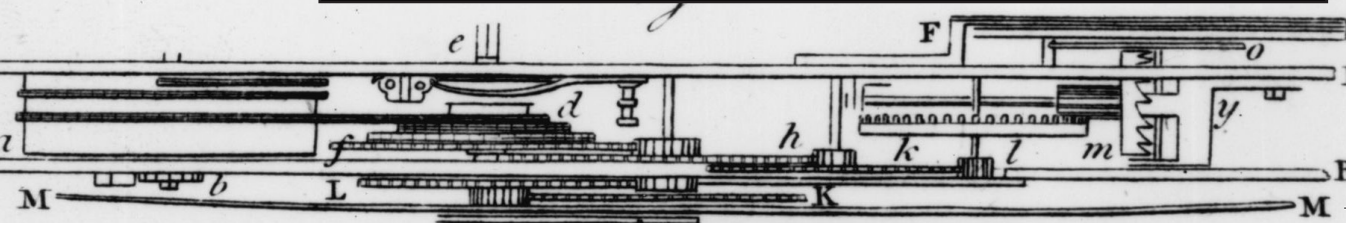
Fig. 4.



THE JOURNAL OF INTERNATIONAL AFFAIRS

THE FOURTH INDUSTRIAL REVOLUTION

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# FOREWORD

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Klaus Schwab

Since the concept of the Fourth Industrial Revolution became common parlance in 2016, it has caught the attention of political leaders around the world and become an essential point of discussion in the fields of economic development and international relations.

In October 2018, Indian Prime Minister Narendra Modi pointed to the importance of ensuring that India grasped the benefits flowing from emerging technologies, stating that “when the first and second industrial revolutions took place, India was under colonial rule. When the third industrial revolution took place, India was struggling to deal with the challenges present after Independence. But India will not remain untouched by the fourth industrial revolution.”<sup>1</sup>

Former Australian Foreign Minister Julie Bishop emphasized the strategic nature of these changes in a speech in June 2017, observing that technologies such as artificial intelligence, distributed ledgers, and additive manufacturing are in the process of fundamentally altering the strategic landscape for states. She said “disruptive change will impact almost every sector and every economy over time. During every identified industrial revolution, the national strengths and capabilities of countries shifted dramatically in relative terms depending on the ability of their government and their economies to respond—or not.”<sup>2</sup>

These statements underline the fact that Fourth Industrial Revolution is not merely a series of incremental technological advancements. It is an upheaval—a dramatic and wide-ranging shift in the way that value is created, exchanged, and distributed across individuals, organizations, and entire economies.<sup>3</sup> And history shows that such upheavals create significant opportunities and challenges for nation states, altering the distribution of political, military, and economic power.

Entire systems that populations largely take for granted—how we transport goods, services, and individuals; how we manufacture; how we collaborate, communicate, and experience the world around us—are being upended and, in some cases, rapidly replaced as combinations of technologies make what was previously impossible the norm. And the policies adopted by the public and private sector during these transformations will have a dramatic impact on who benefits, when,

and how.

The Fourth Industrial Revolution is rapidly emerging on a global scale, but, as with all previous industrial revolutions, the rate and extent of how communities and countries experience it are not all equal. This is because new technologies require resources in their development and dissemination and, despite the promise of “technological leapfrogging,” are never independent of their environment or prior technological enablers. New technologies rely on existing infrastructure, skills, and mindsets from previous industrial revolutions. To further complicate matters, new technologies tend to require the upgrading of these systems and additional investment in order to operate to their full potential and deliver on their promise. Both aspects require countries to deploy resources and create new policies—often creating both economic and political challenges for leaders.

This is important because, while the core technologies of previous industrial revolutions have dramatically altered political and economic systems around the world, their benefits have yet to reach large numbers of people. There are still approximately 600 million people operating smallholder farms, many of whom lack access to the mechanization made possible by the first industrial revolution.

A third of the world still lacks clean drinking water and safe sanitation while 1.2 billion people lack access to electricity—both systems at the heart of the second industrial revolution. Half of the world lacks access to the internet, one of the defining technologies of the third industrial revolution.<sup>4</sup> Unless new technologies are consciously deployed to address existing inequity within and between states, they will tend to exacerbate inequities because these technologies typically depend on reliable power and high-bandwidth connectivity.

Given its rising importance to international relations, the Fourth Industrial Revolution is a normative concept that calls citizens and leaders across all sectors to focus on the urgent need for collaborative solutions to collective challenges, many of which, like climate change, are the fruit of previous phases of industrialisation and globalization. Indeed, living at the beginning of the Fourth Industrial Revolution means we bear a huge responsibility to ensure that the technologies changing the world do so in a way that reflects common values and delivers broad-based benefits.

Unfortunately, our existing national and global institutions, along with many of our academic approaches in economics and other social sciences, have proved incapable of allowing us to understand, constructively discuss, and collectively act to manage global challenges.

The social and political systems that have successfully lifted hundreds of millions out of poverty and shaped our national global policies for half a century are now failing us. Power is becoming more concentrated, inequality is rising, nega-



tive externalities are critically threatening the natural world, and our societies are fragmenting in ways that make investing in the future ever more difficult. Critical lines of communication between citizens and leaders are broken. As former U.S. Secretary of State Madeline Albright put it, “people are talking to governments on 21st century technology, the government hears them on 20th century technology, and responds with 19th century ideas.”<sup>5</sup> The Cambridge Analytica controversy—and subsequent discussions between lawmakers and technology leaders around the world—further revealed the tremendous gap between the power of new technologies to rapidly influence the world, and the ability of political leaders to respond at commensurate speed.

For this reason, I believe that the Fourth Industrial Revolution should be matched with a call for revolution in our global order. That is why the theme of the World Economic Forum’s 2019 Annual Meeting is “Globalization 4.0: Shaping a Global Architecture in the Age of the Fourth Industrial Revolution,” reflecting the fact that each industrial revolution has been matched by the creation of critically-important global norms and standards.

In this context, Globalization 4.0 refers to shaping a global collaborative architecture which takes full advantage of the Fourth Industrial Revolution for the benefit of all. It builds on open markets as a force for economic growth, but always strives for environmental sustainability and social inclusion. As we enter a new phase of technological change, it is imperative that states, both individually and collectively, develop appropriate approaches to investment, trade, and international cooperation.

This issue of the *Journal of International Affairs* will explore multiple aspects of the Fourth Industrial Revolution through the lens of international relations. Revolutions are times not just for bold ideas but also bold action, and I hope that the articles in this issue stimulate both new thinking and consequential action.👑

***Prof. Klaus Schwab** founded the World Economic Forum in 1971 as an independent, impartial, not-for-profit Foundation committed to improving the state of the world. Under Prof. Schwab’s exceptional intellectual and personal leadership, the Forum has become the world’s foremost platform for public and private cooperation. During his inspirational career, Prof. Schwab has received numerous honors. He holds 15 honorary doctorates and national medals of honor, including the Grand Cordon of the Order of the Rising Sun of Japan, the Grand Cross with Star of the National Order of Germany, and the Knight of the Légion d’Honneur of France. He was knighted by Queen Elizabeth II: Knight Commander of the Order of Saint Michael and Saint George. His latest books are *The Fourth Industrial Revolution* (Crown Publishing: 2016), a worldwide bestseller translated in over 20 languages, and the recently*

released *Shaping the Future of the Fourth Industrial Revolution* (Crown Publishing: 2018).

## NOTES

<sup>1</sup> “Narendra Modi says India’s contribution towards fourth industrial revolution will leave world stunned,” *Firstpost*, 11 October 2018, [www.firstpost.com/business/narendra-modi-says-indias-contribution-towards-fourth-industrial-revolution-will-leave-world-stunned-5361041.html](http://www.firstpost.com/business/narendra-modi-says-indias-contribution-towards-fourth-industrial-revolution-will-leave-world-stunned-5361041.html).

<sup>2</sup> Julie Bishop (Speech, Third Annual Sir John Downer Oration, 6 October 2017), [foreignminister.gov.au/speeches/Pages/2017/jb\\_sp\\_171006.aspx](http://foreignminister.gov.au/speeches/Pages/2017/jb_sp_171006.aspx).

<sup>3</sup> Klaus Schwab, *The Fourth Industrial Revolution* (Crown Publishing: 2016).

<sup>4</sup> Klaus Schwab and Nicholas Davis, *Shaping the Future of the Fourth Industrial Revolution* (Crown Publishing: 2018).

<sup>5</sup> Madeline Albright, “We need 21st Century Responses” (Speech, DisinfoWeek, 29 June 2018), [medium.com/dfirlab/we-need-21st-century-responses-6b7eed6750a4](https://medium.com/dfirlab/we-need-21st-century-responses-6b7eed6750a4)